# AUROBINDO PHARMA LTD, UNIT-VI
# Solvent Recovery

## Retrofit of Bubble cap trays with Structural Packing

## Propo olumn

# Technical Information of SDR 005

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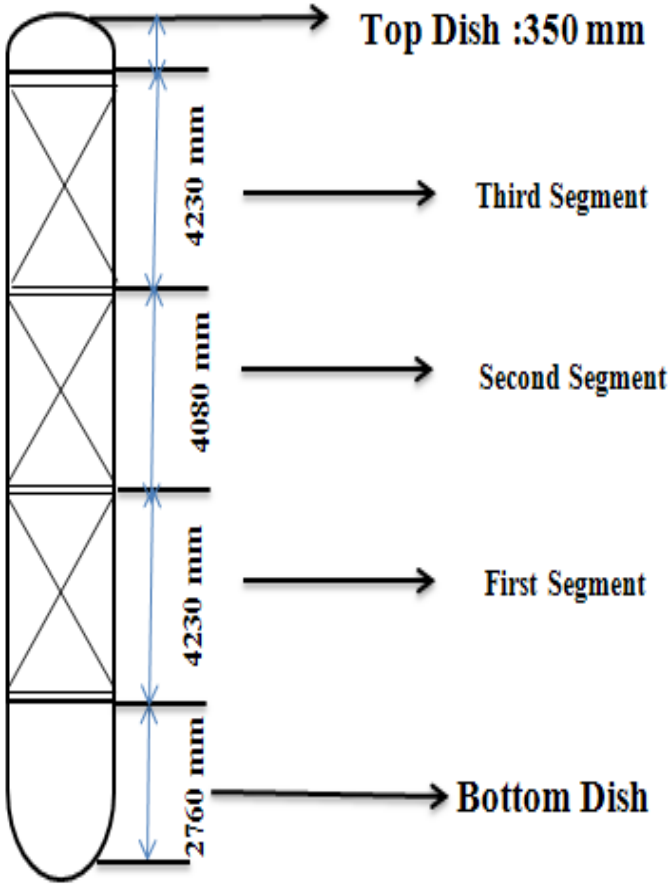
SDR 005 Column Height Detailes Segment Wise




- Column ID : SDR 005
- Column Dia : 970 mm (ID)
- Type of Column: Tray Column
- Type of Trays : Bubble Cap Tray
- No of Segments : 3
- Installed on : 1997

# Existing Column Details

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- SDR 005 Column was installed on 1997 in Unit- 5. It was used for the recovery of various solvents from 1997-2012.

- In the year of 2012 SDR 005 Column was shifted to Unit- 6. Since then the column is being used for the recovery of solvents. As this column is more than 20 years old it is observed that tray efficiency got greatly reduced due to corrosion of the bubble cap trays, because of which the designed output is not achieved both in respect of quantity as well as quality.

- To achieve the designed capacity w.r.t quantity and

# one + Water Distillation data in SDR

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| SDR005 COLUMN OUTPUT DETAILES | | | | | | | |
|---|---|---|---|---|---|---|---|
| S.NO | Date | Time | Vapor Tmp | Reflux | Collection | MC% | A.R.NO |
| 1 | 6-Sep-15 | 18:30 | 54.5 | 1000 | 300 | 2.33 | 15IPRS2087 |
| 2 | 6-Sep-15 | 19:30 | 54.8 | 800 | 300 | 1.99 | 15IPRS2089 |
| 3 | 6-Sep-15 | 20:30 | 55.2 | 800 | 300 | 1.59 | 15IPRS2091 |
| 4 | 6-Sep-15 | 21:30 | 55.2 | 600 | 300 | 1.43 | 15IPRS2093 |
| 5 | 6-Sep-15 | 22:30 | 54.2 | 600 | 300 | 1.55 | 15IPRS2095 |
| 6 | 6-Sep-15 | 23:30 | 54.4 | 600 | 300 | 1.08 | 15IPRS2096 |
| 7 | 7-Sep-15 | 0:30 | 54.5 | 600 | 300 | 1.25 | 15IPRS2097 |
| 8 | 7-Sep-15 | 1:30 | 54.8 | 600 | 300 | 1.32 | 15IPRS2098 |
| 9 | 7-Sep-15 | 2:30 | 54.3 | 600 | 300 | 1.21 | 15IPRS2099 |
| 10 | 7-Sep-15 | 3:30 | 54.5 | 600 | 300 | 0.97 | 15IPRS2100 |
| 11 | 7-Sep-15 | 4:30 | 54.6 | 600 | 300 | 1.80 | 15IPRS2102 |
| 12 | 7-Sep-15 | 5:30 | 53.9 | 600 | 300 | 1.50 | 15IPRS2103 |
| 13 | 7-Sep-15 | 6:30 | 53.9 | 600 | 300 | 1.30 | 15IPRS2104 |
| 14 | 7-Sep-15 | 7:30 | 54.2 | 600 | 300 | 1.44 | 15IPRS2106 |
| 15 | 7-Sep-15 | 8:30 | 54.4 | 600 | 300 | 1.27 | 15IPRS2107 |
| 16 | 7-Sep-15 | 9:30 | 54.8 | 600 | 300 | 1.59 | 15IPRS2108 |
| 17 | 7-Sep-15 | 10:30 | 54.9 | 600 | 300 | 1.78 | 15IPRS2109 |
| 18 | 7-Sep-15 | 11:30 | 54.9 | 600 | 300 | 1.63 | 15IPRS2111 |

- **As per the design of SDR005 Column having a diameter of 970 mm, the designed output is 1000 LPH of distilled solvent with specified quality parameters, but due to the damage of the trays, the output achieved is only 300 LPH**

# antages of packing replacement

| S.NO | Distillation Detailes | Existing | Proposal |
|---|---|---|---|
| 1 | Collection | 300 LPH | 1000 LPH |
| 2 | Reflux | 1000 LPH | 2000 LPH |
| 3 | Distilled output/day | 6000 L | 20,000 L |
| 4 | Distilled output/month | 1,80,000 L | 6,00,000 L |
| 5 | Specification | Doesn't Compiles | Compiles |

- **As per the new proposal the total boil up is increasing from existing 1300 LPH to ~3000 LPH, it is also proposed to change the Primary condenser from the existing 16 $m^2$**

# OI (Return on investment)

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| S.No | Description | UOM | Qty |
|---|---|---|---|
| 1 | Output quantity with exesting facility | Ltrs | 180000 |
| 2 | Expected output quantity after modification | Ltrs | 600000 |
| 3 | Difference quantity | Ltrs | 420000 |
| 4 | Difference quantity | Kgs | 331800 |
| 5 | If the difference quantity sent for job work (Job work price per 1 Kg) | Rs. | 6 |
| 6 | Job work cost in Rs. | Rs. | 1990800 |
| 7 | If the solvent processed in-house, cost per 1 kg of distillation in Rs. | Rs. | 3 |
| 8 | In-house total cost Rs. | Rs. | 995400 |
| 9 | Net savings per month in Rs. | Rs. | 995400 |
| 10 | Project estimated cost in Rs. | Rs. | 1950000 |
| 11 | ROI | Months | 2.0 |

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# *Thank You*